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KED & ASSOCIATES, LLP
P.O. Box 221200
Chantilly, VA 20153-1200

EXAMINER

SHARMA, SUJATHA R

ART UNIT	PAPER NUMBER
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2618

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/771,119	Applicant(s) AHN ET AL.	
	Examiner Sujatha Sharma	Art Unit 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _____ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☒ Claim(s) 11,12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 1/30/07 regarding claims 1,3,4 have been fully considered but they are not persuasive.
2. Regarding claims 1,3,4, the applicant argues that the Hashem reference does not disclose a method of raising the uplink transmission power if power-up commands outnumber power-maintain commands in the power control commands, as recited in the claims.

The examiner respectfully disagrees and would like to draw the applicant's attention to Hashem reference. In col. 4, lines 1-11, where the mobile station receives power control commands from various base stations in soft handoff the power control bits all have a zero indicating an increase in power. The fact that all the bits are zero also indicates that there is no power down commands or power maintain commands from any of the base stations. Clearly then the power up command out number the power maintain command. Therefor the limitation "a method of raising the uplink transmission power if power-up commands outnumber power-maintain commands in the power control commands" is met by the Hashem reference.
3. The applicant further argues that the Padovani reference does not disclose a method of raising the uplink transmission power if power-up commands outnumber power-maintain commands in the power control commands, as recited in the claims.

The examiner respectfully disagrees and would like to draw the applicant's attention to Padovani reference. In col. 5, lines 58-65, the remote station increases it's transmit power if all the base stations issue a power up command which indicates that no base station has issued a power maintain command. Clearly then the power up command out number the power maintain

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command. Therefor the limitation “a method of raising the uplink transmission power if power-up commands outnumber power-maintain commands in the power control commands” is met by the Padovani reference.

3. Applicant's arguments with respect to the newly added amendments to claim 5 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Hashem [US 6,269,239].

Regarding claim 1, Hashem discloses a system and method to combine power control commands during soft handoff in DS/CDMA cellular systems. Hashem further discloses a method comprising the steps of:

- computing command values for a plurality of base stations in a terminal in soft handover with a plurality of the base stations transmitting power control commands to the terminal; see col. 3, lines 5-48
- raising uplink transmission power if the power-up commands outnumber power-maintain commands in the power control command. In col. 4, lines 1-11, where the mobile station receives power control commands from various base stations in soft handoff the power

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control bits all have a zero indicating an increase in power. The fact that all the bits are zero also indicates that there is no power down commands or power maintain commands from any of the base stations. Clearly then the power up command out number the power maintain command

Regarding claim 2, Hashem discloses a method further comprising lowering transmission power if the command values computed for a plurality of base stations includes at least one power down command. See col. 4, lines 40-53.

Regarding claim 3, Hashem further discloses a method wherein if there isn't the power-down command in the power control commands, further comprising the step of maintaining the uplink transmission power if power-up commands are smaller than or equal to power-maintain commands in the power control commands. See col. 4, lines 40-53. Here the weighted power control commands C_n are given values of -1, +1 and zero. If all the C_n bits are zero which indicates that power-up commands are smaller than power maintain commands, then the power remains unchanged.

Regarding claim 4, Hashem further discloses a method wherein if there isn't the power-down command in the power control commands, further comprising the step of raising the uplink transmission power if the entire power control commands indicate transmission power increase. See col. 4, lines 1-11, where the mobile station receives power control commands from various base stations in soft handoff and wherein the power control bits all have a zero indicating an

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increase in power. The fact that all the bits are zero also indicates that there is no power down commands from any of the base stations.

3. Claims 1-4,7-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Padovani [US 6,411,799].

Regarding claim 1, Padovani discloses a system and method to provide power control mechanism that supports soft handoff. Padovani further discloses a method comprising the steps of:

- computing command values for a plurality of base stations in a terminal in soft handover with a plurality of the base stations transmitting power control commands to the terminal; See col. 7, lines 34-49 and col. 10, line 39 – col. 11, line 31
- raising uplink transmission power if the power-up commands outnumber power-maintain commands in the power control command. In col. 5, lines 58-65, the remote station increases its transmit power if all the base stations issue a power up command which indicates that no base station has issued a power maintain command. Clearly then the power up command outnumber the power maintain command.

Regarding claim 2, Padovani discloses a method further comprising lowering transmission power if the command values computed for a plurality of base stations includes at least one power down command. See col. 5, lines 58-65.

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Regarding claim 3, Padovani further discloses a method wherein if there isn't the power-down command in the power control commands, further comprising the step of maintaining the uplink transmission power if power-up commands are smaller than or equal to power-maintain commands in the power control commands. See col. 7, lines 46-62

Regarding claim 4, Padovani further discloses a method wherein if there isn't the power-down command in the power control commands, further comprising the step of raising the uplink transmission power if the entire power control commands indicate transmission power increase. See col. 7, lines 60-62

Regarding claim 7, Padovani further discloses a method wherein the command value is 1 for transmission power-up, 0 for transmission power-maintain, or -1 for transmission power-down. See col. 5, lines 13-20, col. 6, lines 34-48.

Regarding claim 8, Padovani further discloses a method wherein the reference value is 0.5. See col. 12, lines 23-48

Regarding claim 9, Padovani further discloses a method wherein, in the step of raising or maintaining the uplink transmission power according to the result of the comparing step, the uplink transmission power is raised if the average of the command value exceeds 0.5 or is maintained if the average of the command value is equal to or smaller than 0.5. See col. 5, lines 13-20 and col. 12, lines 12-66

Regarding claim 10, Padovani further discloses a method wherein, in the step of raising or maintaining the uplink transmission power according to the result of the comparing step, the uplink transmission power is raised if the average of the command is equal to or greater than 0.5 or is maintained if the average of the command value is smaller 0.5. See col. 5, lines 13-20 and col. 12, lines 12-66

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Padovani [US 6,411,799] in view of Holtzman [US 6,788,685].

Regarding claim 5, Padovani discloses a method comprising the steps of:

- receiving a power control command transmitted from at least one base station; see col. 7, lines 4-45
- computing at least one command value according to the received power control command; see col. 7, lines 34-62
- lowering uplink transmission power if the command value includes a transmission power-down command value. See col. 7, lines 54-62

However he fails to disclose a method wherein if there isn't the transmission power-down value in the command value, further comprising the steps of:

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- comparing an average of the command value to a reference value and raising or maintaining the uplink transmission power according to a result of the comparing step.

Holtzman, in the same field of endeavor, teaches a method comprising the steps of:

- comparing an average of the command value to a reference value and raising or maintaining the uplink transmission power according to a result of the comparing step. See Fig. 2, col. 12, 48-61

Therefore it would have been obvious to one with ordinary skill in the art at the time the invention was made to provide the above teachings of Holtzman to Padovani in order to provide a more accurate method power control especially during soft handoff.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hashem [US 6,269,239] in view of Holtzman [US 6,788,685].

Regarding claim 5, Hashem discloses a method comprising the steps of:

- receiving a power control command transmitted from at least one base station; see col. 4, lines 1-2
- computing at least one command value according to the received power control command; see col. 4, lines 40-65
- lowering uplink transmission power if the command value includes a transmission power-down command value. See col. 4, lines 40-53

However he fails to disclose a method wherein if there isn't the transmission power-down value in the command value, further comprising the steps of:

- comparing an average of the command value to a reference value and raising or maintaining the uplink transmission power according to a result of the comparing step.

Holtzman, in the same field of endeavor, teaches a method comprising the steps of:

- comparing an average of the command value to a reference value and raising or maintaining the uplink transmission power according to a result of the comparing step. See Fig. 2, col. 12, 48-61

Therefore it would have been obvious to one with ordinary skill in the art at the time the invention was made to provide the above teachings of Holtzman to Padovani in order to provide a more accurate method power control especially during soft handoff.

Allowable Subject Matter

7. Claims 11,12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. In addition, claims 11,12 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claim 11 particularly discloses a method of providing hysteresis during power control in order to avoid unnecessary power increase that will cause interference or power decrease that will result in poor performance. The claims further discloses a method wherein

- the command value computing step computes the command value corresponding to transmission power-up for any one of the corresponding base station if transmission

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- power-up commands keep being transmitted from the said corresponding base station for five time slots,
- the command value corresponding to transmission power-down for any one of the corresponding base station if transmission power-down commands keep being transmitted from the said corresponding base station for the five time slots, or
 - the command value corresponding to transmission power-maintain, otherwise.

Claim 12 is dependent on claim and discloses a method wherein a reference slot of the five time slots is a first time slot of a radio frame.

The closest prior art Hashem discloses a method of spreading the power control command over a plurality of time slots. See col. 2, lines 57-63. However Padovani (the primary reference) in combination with Hashem fails to disclose the above underlined unique feature of the invention.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period


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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sujatha Sharma whose telephone number is 571-272-7886. The examiner can normally be reached on Mon-Fri 7.30am - 4.00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew D. Anderson can be reached on 571-272-4177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Sujatha Sharma
March 5, 2007


MATTHEW ANDERSON
SUPERVISORY PATENT EXAMINER